INDUSTRIAL ART

MODERN DECORATIVE GLASSWARE.

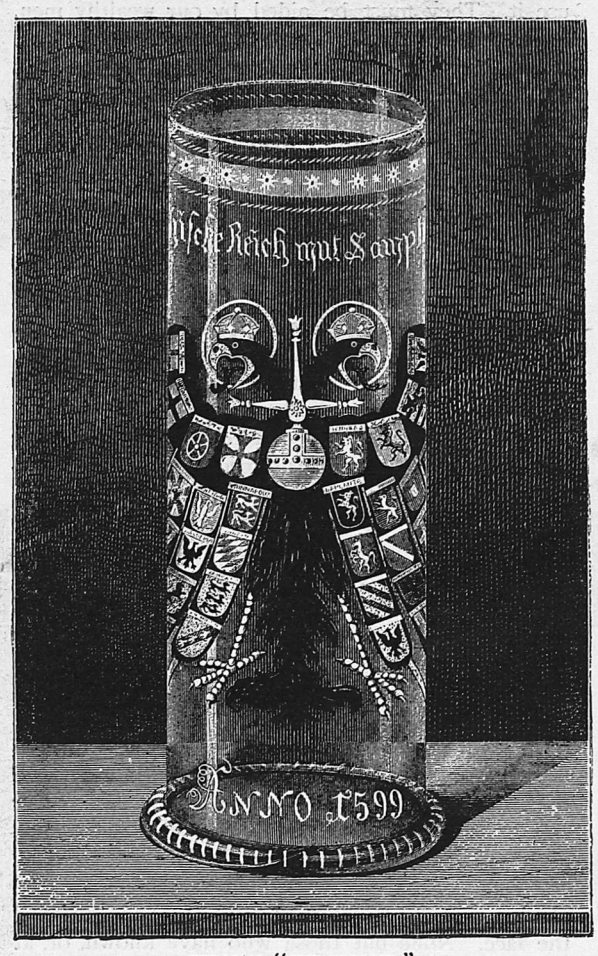
DR. Salviati, in re-establishing the art of ornamental glass manufacturing in the island of Murano, near Venice, a few years ago, little thought what an important effect this revival of a slumbering art would have on decorative glass manufacture in Europe. In the fifteenth century, when Venice alone possessed the secret of glass making, severe penalties had been decreed against workmen who left the city to carry elsewhere the State secrets of the factory. The terrible Council of Ten, governing the Republic, were not content with threatening the fugitive with death from the hands of an unknown emissary: it also threatened imprisonment and suffering to all who might be dear to him at home. The nineteenth century is not so barbarous or jealous of its industrial secrets, yet it is worthy of notice that Venice has still its peculiar style of manufacture as it had in olden times, and those curious "Vasi a reticuli," where white or colored threads of opaque glass cross each other, forming a net-work in the mass of the glass, or the "Vasi a retortori," where these threads follow each other in spiral lines, still remain a prerogative of Venetian manufacture.

The glass manufactured at Venice is what we may unquestionably call "fancy glass." It is blown, and the mass or body of the glass is of different tints, according to the style of the period to which the copied piece belongs. Yellowish bottle glass, greenish, pink or blue glass may be seen among the different specimens of this art, but one of the most interesting is the opalescent glass, for which Venice was celebrated. This glass, the color of which resembled that of water in which a few drops of eau de Cologne have been dropped, was cloudy and uneven; but if a poisonous beverage was placed in it, it would at once be shivered to pieces. The modern imitations have lost this magic power, and we suppose that the owners of ancient vases think them too valuable to attempt the experiment. Venice also made gold glass, which is rarely manufactured now. It was first suggested by a desire to imitate the "aventurine" or gold stone. One of the novelties of the Murano manufactory is a quantity of vases of small dimensions, for the most part of antique shape, of dark ground color, and decorated with splashes of gold and of light colors, which give them the appearance of having been rolled, while still hot, in powdered enamels, then in powdered gold, and last of all placed in the furnace just long enough to melt, partially, all these substances and blend them together. Nothing can be more charming in color than these pieces, and no cabinet can be considered complete without at least one specimen of the quaint glass of Venice, which seems to have been coaxed or tortured by the ingenious craftsmen of the middle ages into purposely difficult forms.

Two excellent examples of Venetian glass are shown in our illustrations.

The modern Bohemian glass, like the Venetian, retains its peculiarities. That made in ancient times was seldom white; it was generally of the bottle glass order, but its beauty consisted in the richness of the enamelled decoration. Those tall glasses, called "Vidercome," all covered with heraldic emblems and crests, and out of which every guest took a deep draught, are reproduced at the present day, and are very ornamental on an oak or a light wood buffet. Engraved glass also originated in Bohemia. First, we are told, the diamond was used to cut the surface, but this process proving too long and too tedious, different modifications were made, which led to the machine in use to-day. It consists in a small lathe, generally worked with a treadle, but capable of attaining a tremendous velocity. The head of the spindle carries different shaped circular cutters of copper or soft iron, varying in size from that of a pin's head to that of a half-dollar silver piece, according to the work to be done. Diamonds of inferior quality, called "borts," are reduced to a powder, mixed with oil and applied to these wheels or cutters. The soft metal becomes impregnated with it; and if, while revolving with great speed, a piece of glass is brought in contact with the wheel, the diamond dust cuts into it.

The main difficulty of this work is that the cutting tool is stationary, and that it is the piece to be engraved which must be turned and twisted about so as to present successively to the cutter the different spots where the engraved lines must pass. Yet this work is not so expensive as it might seem at first thought, and a dozen capital letters can be engraved on a dozen glasses for one dollar. A more recent invention consists in eating away the glass with hydrofluoric acid, protecting the parts to be left



GERMAN "VIDERCOME."

intact with a prepared varnish. This method is better suited for large and coarser work, such as shop windows or advertising signs, than for the delicate work on table-glass, for here the process would take quite as long as the wheel-engraving. But for large pieces, difficult to handle, the wheel-cutting is next to impracticable, while etching is easy.

Some Bohemian glass is of a bright purple, and some is amber yellow. If the coloring is only superficial the cutting shows through in white with a very pleasing effect.

Another Bohemian invention, which has been extensively used everywhere, is what is called crackled or frosted glass. When the piece is shaped, but still warm, it is rolled on a table covered with fragments of broken glass, the size of which varies with the effect to be produced. Of course these small pieces adhere to the surface of the warm glass. When a sufficient quantity is attached the piece is replaced in the muffle till all the fragments are thoroughly incorporated into the surface.

Among the most recent innovations in decorative glass is the Electron glass, which also comes to us from Bohemia. It was first made of amber color, and from this took the name of Electron, which in Greek signifies amber. Since then it has been made with good effect in red and in bottle green.

The pieces are slightly crackled and often decorated with seaweeds or plants. In plain vases the sides are pressed in while the glass is hot, presenting in the dents and bosses fine effects of light and shade. From Bohemia also comes enamelled glass similar to the mosque lanterns of the Arabs and Persians.

Colored enamels were applied to the surface of glass at an early period as a means of decoration, especially in Persia and Arabia. In many mediæval inventories we find pieces of such glass mentioned as having been brought to western Europe, and as being "of the fashion of Damascus," or as painted "à la Moresque." The bottle, called a "surahé," and the mosque lamp shown in the illustrations, are good specimens of this style of decoration. The lamp shows particularly what artistic use was made of letters and inscriptions. A few years ago a French artist named Brocard succeeded in producing some exquisite specimens of this kind of glass, following oriental designs. This work is highly valued, and is extremely expensive, for the smallest glass he makes is worth at least twenty dollars. The house of Lobineyr, of Vienna, is now making glass of the same style but much less expensive.

The latest French innovation is a glass which is heavy and very thick. It is worked into Chinese or Japanese shapes, and fully justifies its name—rock-crystal glass. The decoration consists of lines deeply cut in, representing flowers and birds, painted with gold, bronze, silver, or low tone colors.

Another French novelty in the glass trade is a lustred glass with metallic iridescence of green gold or red copper. Much old glass from Pompeii and Herculaneum, from Roman tombs, and from the Cypriote temples, possesses iridescence, and reflects all the colors of the rainbow. Peligot, the celebrated French chemist, thinks this glass was originally plain and became iridescent from long exposure to air and moisture at a high temperature.

The modern artificial process is said to consist essentially in submitting the glass, under pressure, and at an elevated temperature, to the action of water containing 15 per cent of hydrochloric acid. This acid is thought to act by dissolving the alkaline silicates, and leaving the surface of the glass finely corrugated, and thus capable of refracting the light like mother-of-pearl. If the exposed surface be ground off, the iridescence is instantly lost.

This glass, which has a very glistening surface, is exceedingly beautiful as the iridescent lustre plays about it on all sides. The ornaments consist in long drops running down the sides, "à la Japonnaise," and panels in enamelled colors.

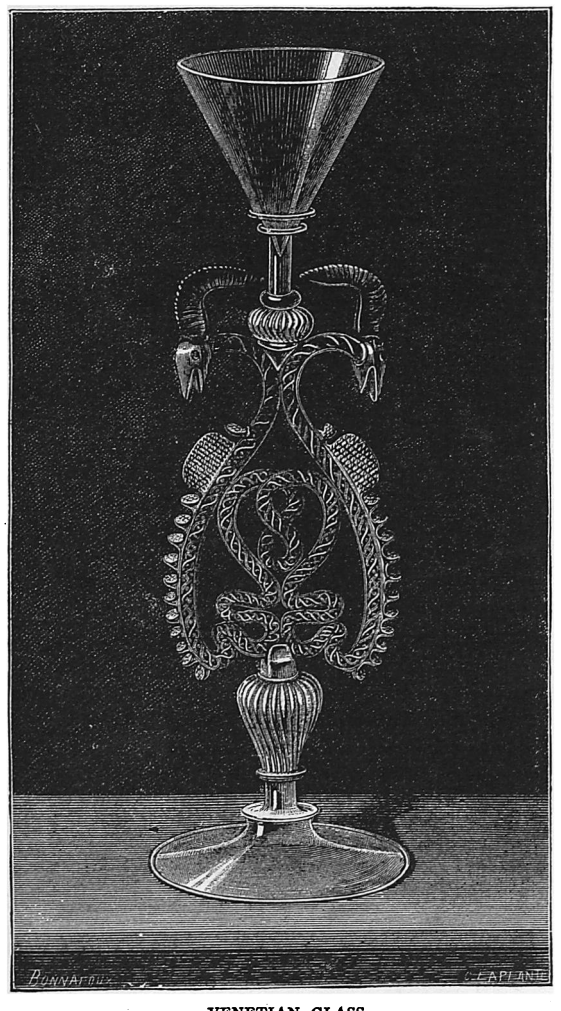
The German iridescent glass, which created a sensation at the Vienna Exhibition when it first appeared, seems to have gone a little out of fashion, but it will doubtless soon regain public favor when its more ambitious rivals have settled into their proper places. Dark iridescent glass, suggested by the pieces found by Dr. Schliemann in ancient Ilium, has been very successfully made in England, and has a rich effect among lighter pieces of glass. Indian glass, in imitation of the pieces brought back from his journey by the Prince of Wales, has been made by Webb in England. It is of a yellowish-white, semi-transparent body, with wide spiral or parallel bands of color. Never has there existed a greater profusion of glass fit for decorative purposes than at the present day; and as glass in general is not very expensive, and is exceedingly ornamental, the amateur can easily brighten up dark corners in his abode by judiciously distributing here and there a few pieces of these different styles of modern glass.

FRÉDÉRIC VORS.

A TALK ABOUT CARPETS.

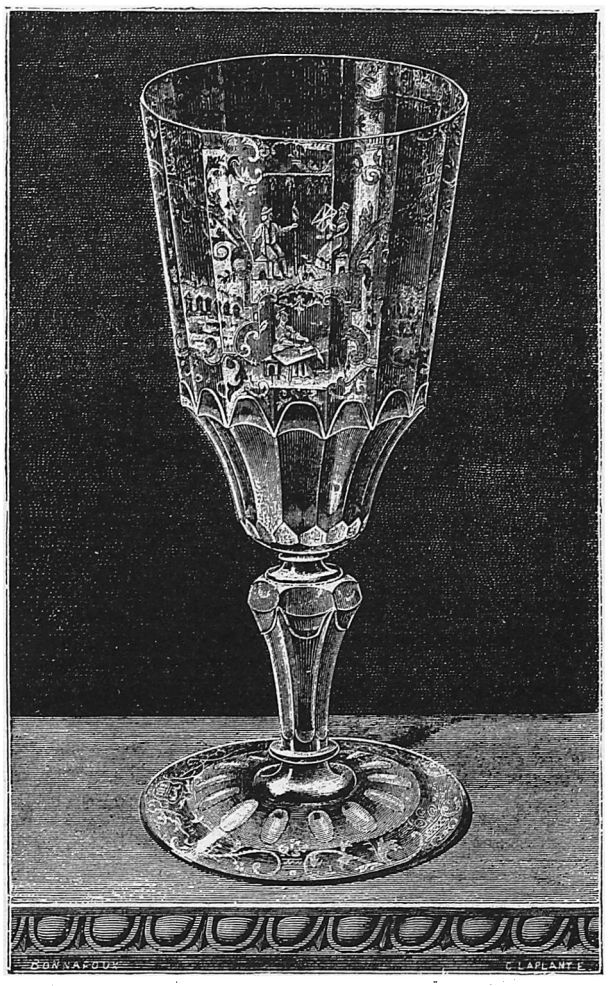
BEFORE the spirit of this age had conceived so engrossing a love for artistic house-furnishing as has manifested itself during the last half dozen years, the subject of carpet design had already been well discussed in the literature of art. Nevertheless the average artistic intelligence, when tried by the carpet test, is still not up to as desirable a standard as has been gained in some other directions. Society has not wanted for such instruction as that strict propriety allows only flat ornament in carpets, and demands a neutrality of effect in color. So far as one or two primary rules can go, this instruction has been undoubtedly serviceable. Indeed, one who manifests no scruple about grinding the faces of cherubs beneath his heels in his own house is now rarely to be met with; and æsthetic conscience, if it may be called so, has quickened in many an aversion to treading, day after day, over well-rounded vases bearing flowers after gigantic models, with variations of basket and trllis-work, united with an assortment of extravagant forms calculated to illustrate the great kingdoms of nature on a magnified scale.

It is well to remember that carpets were originally identical with tapestries, and remained so down to a late period. Thus, an item in an inventory of furniture at Hengrave Hall, Suffolk, in 1603, was "one large coobard carpett of Turkeye work;" and there were "carpets for the windows of Inglish work, wrought with eglentynes." Carpets were among the "bancaria" or bench-coverings in the choirs of cathedrals, and were put to various uses as draperies in which decorative effects would not be reprehensible. In the still more ancient and limited manner of using the carpet a greater picturesqueness of design was alllowable than can be the case where nearly or quite the entire floor is covered with the fabric. Where a pattern singly wrought upon a rug spread before an ancient couch might be a special object of gratification to the eye, it would be greatly cheapened by repetitions in a regular series over numerous square yards of carpet surface. In the celebrated spectacle given by Ptolemy Philadelphus, where there were golden couches, with feet made like sphinxes, on the



VENETIAN GLASS.

two sides of the tent, a hundred on each side, it seems not unsuitable that there should have been handsomely embroidered rugs of elaborate designs spread in front of these resting-places, while thin Persian cloths covered the centre space. But representations of natural forms, turned out by machinery and presenting themselves at equal distances over our floors, are without much justification, since this is not a field for the free exercise of fancy for fancy's sake, even where the work is done by no mean art.



BOHEMIAN TABLE GLASS.

The best European styles of carpets, with all the artistic skill which is now employed upon them, are still surpassed by the Oriental styles. In consequence of their tedious process of manufacture the carpets of the East are always necessarily expensive, yet they are less so than fabrics made in the same manner in Europe, as those of the French Government works, some of which are worth sixty dollars a square yard. Formerly Persian and Indian rugs were of small size, and, when designed for Eastern use, to sit or recline upon, they continue to be made so; but many are made larger to meet the European demand coming largely through Smyrna and Constantinople, and some of those recently manufactured will cover as many as forty or fifty square yards, still being wrought all in one piece.

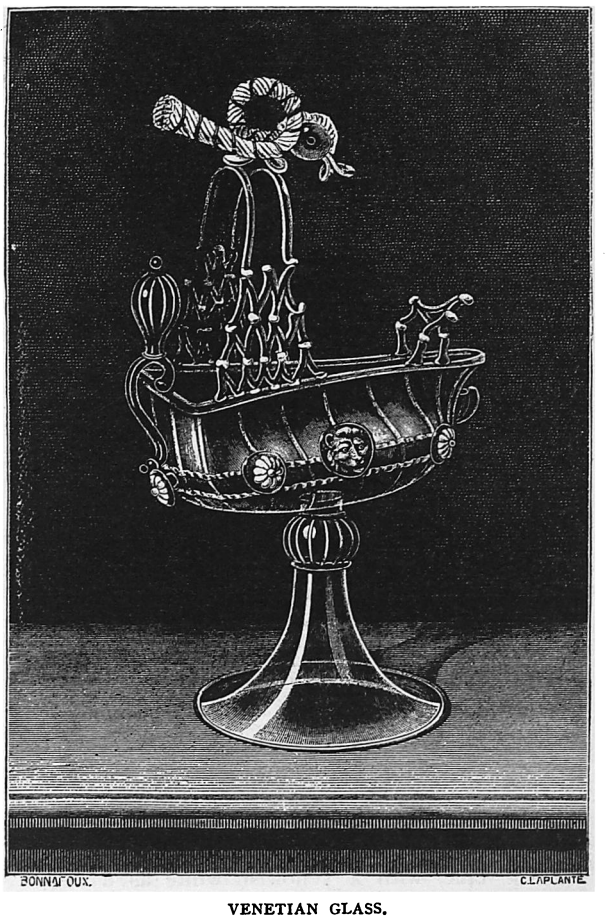
Among the various Eastern carpets, neither lengthwise nor crosswise forms any part of the motive, and the forms, although of unlimited variation, are usually no more than suggestive of anything real in nature. Wherever natural forms are to be distinguished they have an altogether conventional treatment. One of the most common of these is the Persian pine, the sacred tree of the Persians, which is always to be seen growing in their cemeteries. Occasionally the pine form is the only decoration employed, and this is understood to signify that the carpet was designed to remind those for whom it was made of their dead. A slight arc or crescent form is also often introduced. No two of these carpets are ever exactly the same in grouping of forms and in color. Sometimes the intermingling of hues is such as to produce a curious changeableness, varying at every turn of the observer, and suggesting the wings of certain varieties of butterflies. Most usually these carpets are without natural representations, the Persian religion prohibiting any introduction of forms of life, and this is undoubtedly the true doctrine as applied to the carpet. But, strange to say, there is not always a strict adherence to this excellent custom; and to one who was much bewildered at observing animals very accurately represented on some of the Persian carpets displayed at the Centennial Exhibition, a gentlemen well versed in Eastern ideas and products remarks: "You will understand that in those countries, as in ours, there are differences in conscience." Among the carpets brought here are some having the pattern pointing all in one direction; these are prayer-carpets, of which one end is laid carefully toward Mecca, when the faithful devotee prostrates himself thereon.

An almost unlimited use of colors is allowed by the method of producing the designs in Oriental carpets, each tuft of worsted being knotted separately into the warp, and the rows of tufts finally locked into position by a woofshot passed over by the fingers. The process is about the same as that of making French tapestries, with the exception that for the latter work a shuttle needle is used in attaching the worsteds of the warp-threads. Usually the colors of the Persian carpets are warm negatives, with gorgeous hues so intermingled that a beautiful mellow effect is obtained.

The partly worn rugs picked up in various Persian districts, and known to the trade as "antiques," are accounted to be fifty or a hundred years old, but are still in excellent condition, and capable of a durability which can hardly be imagined to have any limit. They make their appearance in the American market, either in the soiled state in which they were purchased, or cleaned by some Eastern process, such as rubbing salt into the tuft of a carpet and placing it for some time in a running stream.

Persian carpets are almost invariably of wool, while among Indian productions, although the greater proportion are likewise of that material, are those velvet carpets with embroideries of gold, such as are exported from Benares and Morshedabad, and certain rich varieties wrought at Wurrungal, Lahore, and elsewhere, all of silk with full deep pile. These luxurious styles are well illustrated by the specimens brought home among the gifts of the Prince of Wales; and various noted examples, wrought by the Reformed Thugs in the Government School of Industry, are in the possession of his Highness.

Of varieties suitably designed for window-draperies and portières is a fine Kielim carpet recently imported, bordered at the lower end with netted work



VENETIAN GLASS.

forming lacelike points edged around with a row of little tassels.

The Moorish rugs resemble the Persian and Indian fabrics, but are generally distinguishable by the yellows occurring either separate and pure or in a tertiary

form. In many pieces from Morocco the utmost harmony results from a free use of lemon and orange yellows, as well as citrine and yellow greens, and such may very properly be welcomed in some of our rooms which are unvisited by the sun.

A single large pattern converging to the middle point, and uniting colors which are dark and rich and well harmonized, is the general description of one kind of design in the Turkey carpet. But one much better adapted to various rooms is that in which a dark ground bears small figures in several rich colors, forming a representation, as is supposed, of inlaid jewelled work. The former style has been considered by authorities on Oriental ideas as intended for some use which would leave the central representation free to the glance; and Owen Jones noted in evidence the case in which Turkey carpets cover a raised platform or dais at the end of a saloon with cushions all round the edge on which the Turks recline. But Europeans and Americans making use of these carpets usually cover the central portion with tables and other furniture, and never sit about the edge in a possible contemplation of the middle.

It has been generally and erroneously supposed that green, the color sacred to Mohammed, is never used in these carpets, and that in case of its being seen the fabric is probably not genuine. The truth is that green repeatedly appears in genuine Turkey carpets; its presence is possibly to be explained on the "differences of conscience" theory.

In consequence of their quiet character and capacity for service the Eastern carpets are well suited for common usage. They seem never out of place in the furnishing of either the plain or the sumptuous apartment, but particularly for library, sitting and dining rooms nothing else is so desirable.

For covering the entire floor the richest carpets in use are those from the Government manufacturing establishments of France, made by a modification of the Eastern process, and having the texture of Turkey fabrics. The Gobelins are more rare, and during the reign of Napoleon III. were designed only for imperial palaces, so that in the breaking up of a court establishment was the millionaire's only hope of ever securing a piece of this most beautiful textile.

The Aubusson carpet with its beautiful delicacy of tone is also in demand for elegant furnishing, and there are hand-wrought carpets from the "Manufacture Royale de Tapis" of Tournai, in Belgium, which are similar to these French varieties.

Next in rank are the Axminsters, formerly only made to order of the size required, and by the hand process, but now produced in breadths also, and of a value from $25 down to as low as $10 per square yard. Among the best varieties are those now made at Glasgow, although both Wilton and London have been noted for excellence in this style. In a specimen lately shown the ground is composed of two delicate shades of sage, the lighter as pale as green ivory, both in slight and irregular bars interlacing at intervals; over this negative field lies a light scattering of red and yellow tulips; the border unites these colors upon a band of peacock blue.

All these styles are suitable for palatial establishments. The Wiltons are designed for very handsome rooms also, being next to the costlier hand-wrought styles. One of the best recent examples for an ordinary parlor combines olive green with a trace of pale blue over ivory white, and follows the Eastern idea in the forms and distribution. Another of similar design has a higher tone of color through its Indian red and peacock blue, with a yellowish white as a negative. This is better than the preceding style for a north room, as one of the things we have always to consider in furnishing is the character of the light entering a room.

Regarding the tone of our carpets we must hold council with all the various objects to be associated with them. Some will urge that a carpet should be darker than the general tone of a room; but correctness will depend very much after all on what we propose to realize, which may be a quiet accordance or a completion of our harmony through deeper contrasts. In such case we are mostly left to study it out for ourselves, being able to borrow but little that can be of use from the authorities.

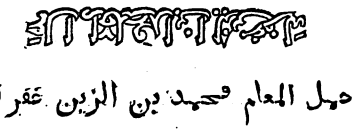
MARTIN FRAZER.

COPPER BAPTISTERY OF PERSIAN MAKE.

PERSIAN ART.

I.

MORE than ordinary attention has been paid for some time to Persian art, a new interest in it having arisen from the oriental collection which the Prince of Wales brought back from India, and which was



ORNAMENTAL ARABIC INSCRIPTION.

exhibited first in London and later at the Paris Exposition. Many of the most important pieces of this valuable collection were of Persian manufacture, for, though they were presented to the Prince by Indian grandees, such is the reputation of the Persian craftsmen, even to this day, that they were called upon to produce their masterpieces.

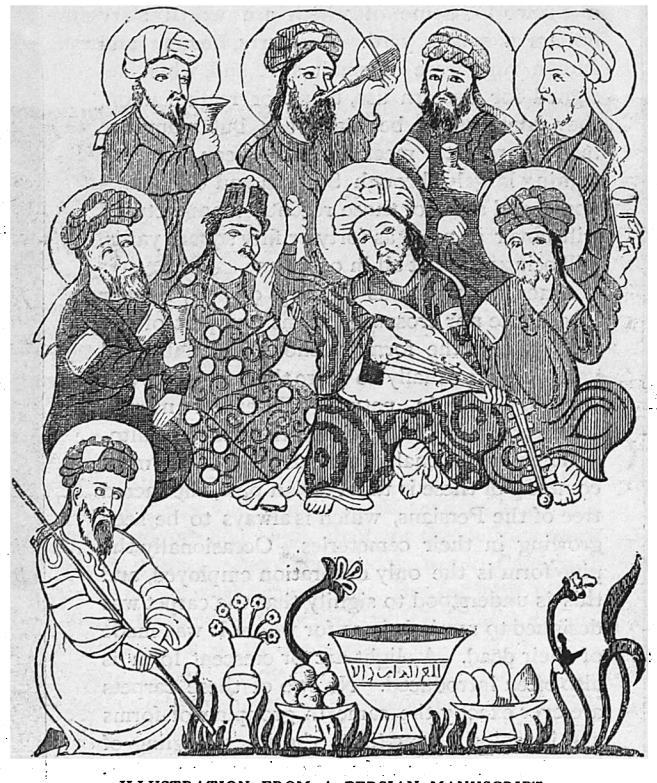


ILLUSTRATION FROM A PERSIAN MANUSCRIPT.

From the earliest history of art in Asia the art of the Persian race has had a distinct character. Like all other styles, it has passed through many different phases, but has still retained its peculiar merits. The ruins of Persepolis recall those of Nineveh and give us an exalted idea of the power and artistic importance of Persia many hundred years before the Christian era. The tomb of Cyrus and the ruins of Pasargardae are also fine monuments of art history. After the Roman conquest the art of Persia, like that of Greece, under the military rule of the victors, was crippled and lost its strength and independence, though it rose again after the downfall of the Roman empire and reached its highest point of excellence at the end of the sixteenth century. At that time the route to India and China round the Cape of Good Hope was hardly known, and, for centuries before, all the trade between Europe and the eastern part of Asia passed through Persia, and the markets of the country, supplied from China, India, and other manufacturing districts in Asia, and with the wares, arms, textile fabrics, and carvings made by the inhabitants themselves, were frequented by purchasers coming not only from Constantinople and the shores of the Adriatic, but from distant parts of Europe.

The best information we possess in regard to Persia is furnished to us by a French traveller named Chardin, who gives very minute and accurate details of what he saw there in the beginning of the seventeenth century; but, however interesting his narrations may be, he lacked the technical information necessary to explain their arts and manufactures in a manner which would have been beneficial to manufacturers of other periods. One of the interesting points of the history of the manufacture of pottery in Persia is the similarity of their wares to those of China; but Chardin seems not even to know the distinction between porcelain and pottery, and indiscriminately uses one expression for the other.

After the conquest of Persia by the Arabs, the conquerors carried away with them the principles of the decorative art of the vanquished, and probably many of their artisans, and gradually Persian art, after undergoing slight modifications, which did not change its original character, and after having travelled all along the northern coast of Africa and Sicily, again asserted itself in the magnificent arches, vaults, and niches of the Alhambra, which in architectural style closely resembles, though on a larger scale, the modern houses in Persia.

One of the peculiar methods of decorating earthenware, which originated in Persia, is the use of metallic oxides, which, in passing throuhg the baking-kiln, are partially reduced and assume a metallic iridescence or lustre. In true Persian pieces these tints are yellow on a white ground or of a fine lapis-lazuli blue. The Moors, who, through the Arabs, learned this art, made great use of it, and the numerous decorated dishes or plaques they have left are classified as Siculo-Moresque if made during the occupation of Sicily by the Moors—that is to say, from 827 to 1090—and as Hispano-Moresque if made during the time that the Moors ruled over Spain—that is, from 1200 to 1609—the Alhambra dating from the middle of the fourteenth century.

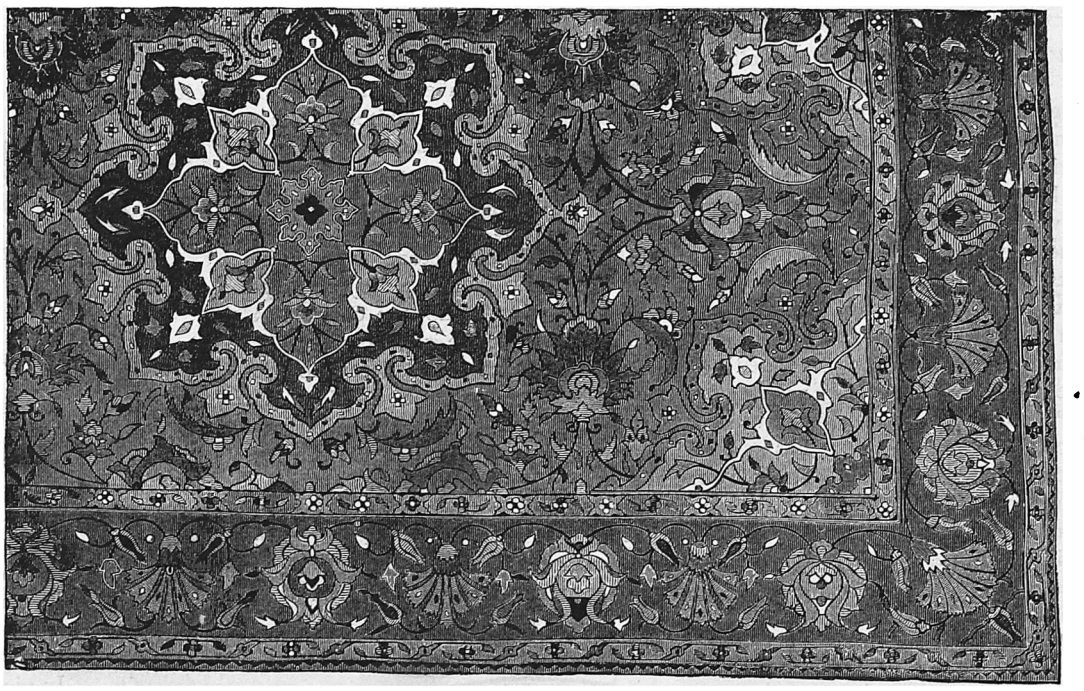
The only important modification made by the Arabs in the Persian style of decoration is the omission of the representation of any living object, in accordance with the orders of Mahomet. To replace the figures they introduced inscriptions in Kufic and other characters, which produce a very ornamental effect. The inscription illustrated herewith is found on several metal pieces, and signifies "Made by the Master, Mohammed, son of Zein-ed-din, to whom may God be merciful."

As metal workers the Persians have been celebrated since the earliest records of history. The blades of Damascus are still famous and sought after even more than those of Toledo, in Spain, where probably the secret of the Persian manufacture had been carried. Many stories more or less probable, are told of the manufacture of these sword blades, such as that they were forged out of horseshoes and nails, and tempered by being carried through the cold air by warriors mounted on swift Arabian coursers. The more probable tale is that they are made out of a peculiar kind of iron, which, after it

has been forgedinto the shape required, is placed for six or eight days in the furnace of a hot bath, where the greatest attention is paid to the even heating. When the blade is taken out of the furnace it is left at the temper it has therein acquired. The peculiar grain or damascene is produced probably by the traces of oxide left in the ore. Some authors say that it is brought out by polishing it while hot with a certain mineral. Under the same name, "damascene," are also included the gold and silver decorations illustrated and described in the November ART AMATEUR. The best way to familiarize our readers with the peculiarities of Persian ornament is to place numerous illustrations before their eyes, for one picture in such matters teaches more than many long descriptions.

In the Museum of the Louvre, in Paris, is a curious Persian copper vase, about five feet in diameter, engraved in the same style as the ewer illustrated in the last number. This piece is very old, and is supposed to have been brought back from the crusades. It was used as a baptismal font for the children of the kings of France, and was carried to Fontainebleau for the baptism of the Dauphin, afterwards Louis XIII. This vase is ornamented with what the ancient writers who describe it call silver, but it is probably tin-foil. This is applied on the smooth surface left between the lines cut by the graver, and the method of making the tin adhere to the copper is similar to that used in damascening to unite the precious metals with the iron or steel. Round the edge of the surface to be covered with tin small sharp cuts are made in the copper, but instead of being completely cut off the pieces are left standing up, like small thorns; on the surface thus prepared the tin-foil is laid and then burnished; the pressure of the burnisher causes all these thorns or points to rest on the metal, but in doing so each one grasps a certain portion of the tin. If a magnifying glass is used to examine work of this kind the points of copper or brass which have been flattened down appear as so many rivet-heads holding the tin in place. The figures on the vase represent Persians and Chinamen. A king seated on a raised platform with his guards by his side is repeated in two medallions. Other medallions represent sporting or military scenes, and between these are six warriors on horseback fighting with spears, bows, and battle-maces. The principal personages have a nimbus round their heads. The "fleur de lys" of France also occurs in the ornamentation, but that may easily have been added after the piece was brought to Europe.

Persia has produced many textile fabrics which have been extensively used and imitated in other countries. It is to them that the invention of block-printing on stuff is attributed, and the chintzes which were so popular a few years ago for bedroom or country-house upholstering were originally made in Persia, and are known in France under the name of "Perses." Damas or damask cloth was first woven at Damascus, and gauze takes its name from the town of Gaza.



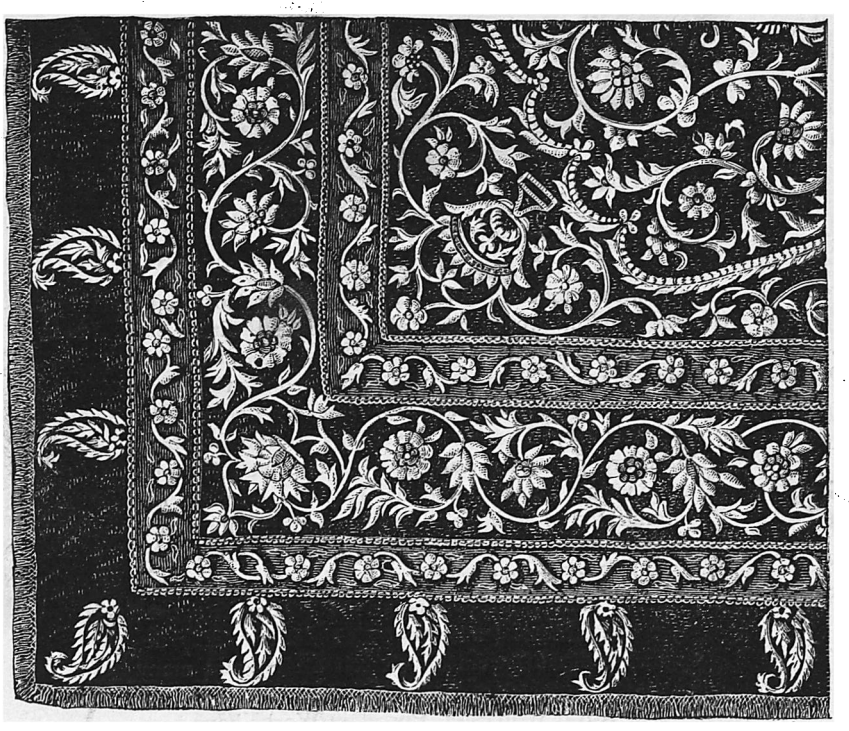
SILK PERSIAN CARPET.

But the two articles for which Persia is most celebrated are shawls and carpets. Carpets are made in different parts of Persia, but principally at Kurdistan, Khorassan, Feraghan, and Kerman, and in each of these places distinct styles are manufactured. The finest are made at Kurdistan, where are also manufactured some rugs called Do-ru, very thin, smooth, and alike on both sides. The rugs are generally long and narrow, and several of them, side by side or crossing each other, are used in one room. They are woven on a hand loom, the shuttle even being propelled by the workman. We give in our illustrations a dark blue velvet embroidered carpet from the collection in the South Kensington Museum, and a silk carpet of the sixteenth century from the collection of the Marquis de Saint Seine. Shawls are made at Kerman not much inferior to those of Cashmere; they are woven by hand like the carpets. The material principally used is called "koork," and is the under wool of a peculiar kind of wild goat somewhat similar to the merino sheep of Spain.

Gold and silver brocades have been made in Persia for centuries back, some of these stuffs figuring among the presents sent to Charlemagne. As a natural appendix to the art of weaving, that of embroidery has always been an important feature in Persian work. Colored silks and gold and silver threads are used to produce elaborate effects. The most peculiar kind of needlework is one that resembles patch-work. Several pieces of plain material, similar to the Persian shawls in texture, are selected and let one into the other, one piece being cut out of one color and replaced by a piece of another color, exactly filling the cut. These pieces are shaped geometrically, or made to represent the outline of some flower. They are sewed together with a chain-stitch, following exactly the outline, and covering the joints of the pieces. On this groundwork, already giving the flat tints of the decoration, the more elaborate embroidery is done.

Another important feature of Persian art is their manuscripts. They held handwriting in high esteem, and knowing nothing of the printing-press, took great care of the appearance of their written books. The illustration is taken from a manuscript in the National Library in Paris, dating from the thirteenth century. There are 198 leaves in the work and 101 pictures, which in many cases cover entire pages. These show a brilliant reception at court, a group of soldiers on the march, an assembly of savants, a funeral, a halt in the desert, a slave market, in fact all the different episodes which occurred in the life of a kind of wandering Jew called Abou-Zeïd, and which are related by his friend Hareth-ben-Hamman. A very fine Persian manuscript is on exhibition in one of the show-cases in the Astor Library in this city.

FRÉDÉRIC VORS.



VELVET PERSIAN CARPET.

NOTES ON PORCELAIN.

PORCELAIN, or china as it is commonly called, can be distinguished from pottery, or faïence, by holding it against a strong light. Porcelain will then appear *translucent*, pottery, or earthenware, *opaque*. According to the relative hardness of the paste after firing, porcelain is divided into hard-paste porcelain and soft-paste porcelain. Hard-paste porcelain can only with difficulty be scratched with a file or a steel point, has a semi-vitreous fracture, and will stand without injury sudden alternations of high and low temperature. It feels cold to the touch, and is bluish milk-white. The rims or projecting rings upon which specimens of hard-paste porcelain rest are generally left without glaze, which affords a ready method to distinguish them from specimens of soft-paste porcelain.

Soft-paste porcelain is more easily attacked by a file or a steel point, less dense, of a fine porous fracture, feels warm and soapy to the touch, and has a cream-white enamel-like appearance. The supporting rims are generally covered with glaze. The paste after firing is nearly equally translucent and sonorous as hard porcelain.

The different degrees of hardness in hard-paste and soft-paste porcelain are due to different proportions of silica and alkalies in the body. The larger the proportion of silica present, the more compact the resulting porcelain. The average amount of alkaline oxides in oriental porcelain appears to be 6 per cent, in Dresden 6.3 per cent, in Bristol 4 per cent, with about 60 to 65 per cent silica and 30 per cent alumina. The soft English porcelains often contain no less than 33 per cent of alkaline matters, with only 40 per cent of silica and 25 of alumina. Soft porcelain is an artificial combination of an alkaline flux, with bone-ash, sand, chalk, or gypsum. Hard porcelain is composed of *kaolin* and *petunse*, both natural products. *Kaolin* alone would form an opaque body, but by the admixture of a perfectly transparent substance, *petunse*—called "moorstone," or "china-stone" in England—the paste is rendered capable of transmitting light.